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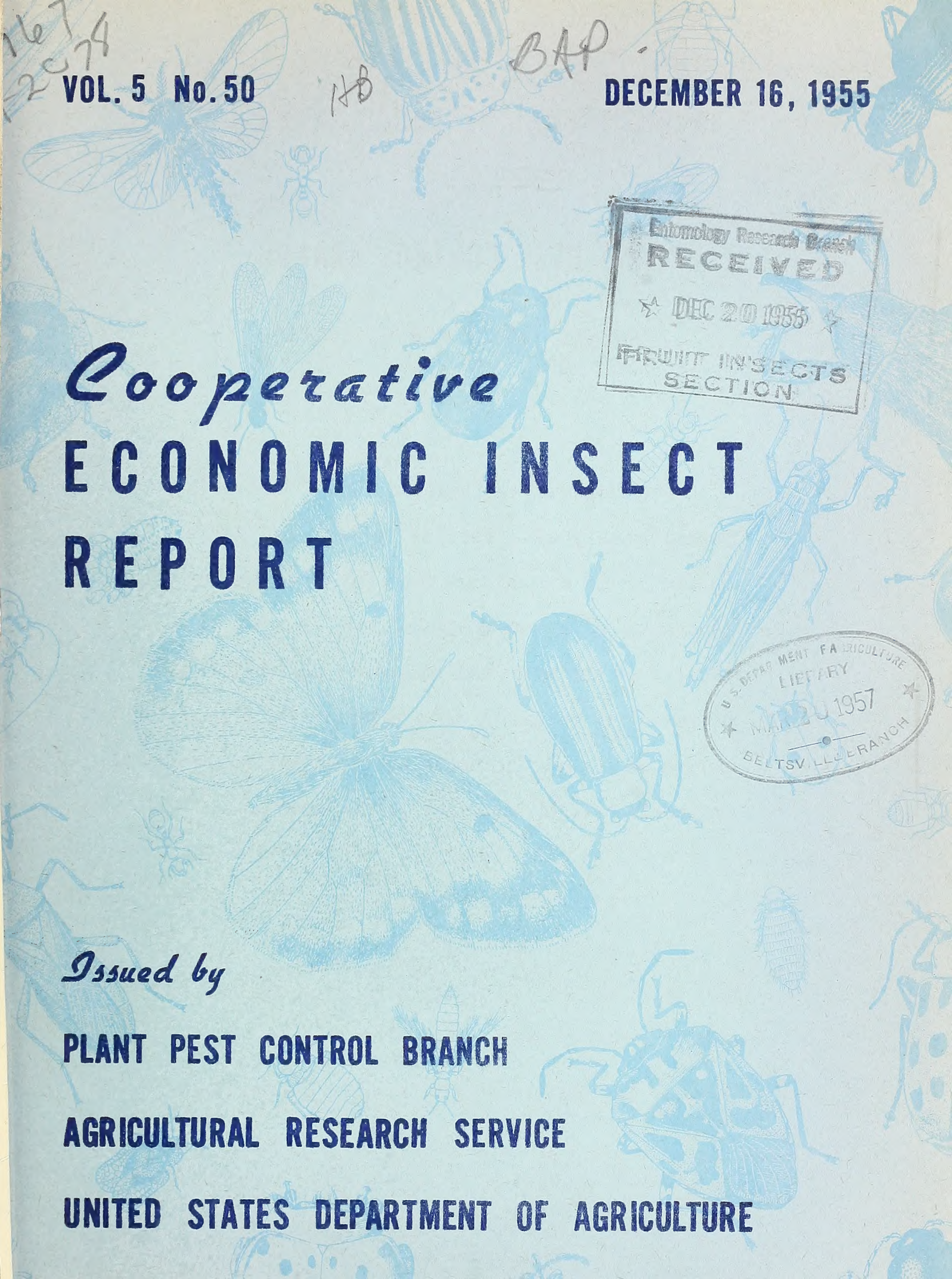

VOL. 5 No. 50

DECEMBER 16, 1955

Entomology Research Branch
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FRUIT INSECTS SECTION

Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
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Volume 5 December 16, 1955 No. 50

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG populations noted in several Texas Panhandle counties. Medium infestation on barley in Eddy County, New Mexico. (p. 1093).

WHEAT STEM SAWFLY loss estimates for 1955 in North Dakota. (p. 1093).

Spread of the SPOTTED ALFALFA APHID in the United States (map). (after p. 1093).

WALNUT HUSK FLY reported from Utah for first time. (p. 1095).

BOLL WEEVIL hibernation survey results in Virginia. (p. 1095).

FRUIT INSECT conditions - 1955 - in New York and New England. (p. 1098).

SUMMARY OF INSECT CONDITIONS - 1955 - in South Dakota (p. 1102) and Nevada (p. 1105).

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WEATHER FOR THE WEEK ENDING DECEMBER 12, 1955

Unseasonably cold weather persisted over most of the Nation for the second consecutive week as cold Arctic air continued to flow southward east of the Rocky Mountains. The week's precipitation was moderate to heavy in Florida and the Pacific States, but generally very light elsewhere and virtually all in the form of snow in northern areas.

Subzero minima occurred daily in northern Great Plains and upper Mississippi Valley, with Bemidji, Minnesota, recording -28° on Friday. In Minnesota frost penetration was 6 to 12 inches on the 9th except in central portions of the State, where it was reported as 24 inches. Navigation in the Mississippi River at St. Paul, Minnesota, ended on December 1. Temperatures for the week averaged 21° below normal at Huron, South Dakota. Subfreezing minima, occurring throughout the week in most interior sections, extended to northern Florida and coastal sections of Alabama at the end of the period - Mobile, Alabama 30° and Tallahassee, Florida, 31° on Sunday morning.

(Continued next page).

In the Great Plains and Mississippi Valley the week's precipitation was virtually nil. In the lower Great Plains where the ground is bare, soil drifting was reported in eastern portions of Colorado and New Mexico.

The week's snowfall was mostly light although occurring frequently in the Great Lakes region. Most of the snowfall in the East occurred on the 9th when a low pressure area moved up the Atlantic Coast. Two to 7 inches fell in the Appalachians and 1 to 3 inches on the outer islands of southern New England. Heavy snow, however, fell in Washington and Oregon, increasing the heavy cover in the Cascades. There was little change in the extent of snow cover during the week. Snow depths in the Cascades now range up to 105 inches at Paradise Ranger Station, Washington. Silver Lake, Utah reported the greatest depth in the Rockies, 50 inches.

A deep snow cover remained in the eastern Dakotas, Minnesota, and upper Lakes region. In South Dakota most of the 2 to 15 inches which fell during the storm of December 2 to 4 (the state's sixth heaviest snowstorm on record) remained on the ground. In the upper Lakes region Duluth, Minnesota, reports 23 inches and Houghton, Michigan, 32.

(Summary Supplied by U.S. Weather Bureau).

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Reports in this issue are for the week ending December 9, 1955, unless otherwise designated.

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*) - TEXAS - Of 22 counties surveyed in panhandle area, populations were found in Potter, Randall, Deaf Smith, Castro, Parmer, Swisher, Briscoe, Floyd, Hale and Hansford Counties, with from 1-8 per row foot. Populations were quite spotty and generally higher in volunteer fields. Predators fewer than during previous survey. (Daniels, Cleveland, Ashdown). NEW MEXICO - Infestations medium on barley stands in Loving area of Eddy County. (Durkin).

BROWN WHEAT MITE (*Petrobia latens*) - TEXAS - Populations generally low over most of panhandle, but some populations were as high as 15 per linear foot of row, particularly in northern counties. (Daniels, Cleveland, Ashdown).

SPOTTED ALFALFA APHID - NEW MEXICO - Populations increasing on young alfalfa stands in Rio Grande and Pecos River Valleys. (Durkin).

APHIDS - NEW MEXICO - Aphids collected from sweetclovers (*Melilotus indica* and *M. officinalis*) in Hatch area of Dona Ana County identified by Louise M. Russell as SPOTTED ALFALFA APHID and SWEETCLOVER APHID (*Myzocallidium riehmi*). Aphids on *M. officinalis* were mainly *M. riehmi* with a few spotted alfalfa aphids present; however, populations on *M. indica* consisted of about one-half spotted alfalfa aphids and one-half sweetclover aphids. Spotted alfalfa aphid nymphs of various instars noted on *M. indica*. A seedling stand of 10 acres of *M. indica* virtually wiped out. (Durkin). OKLAHOMA - A check of 22 alfalfa fields in seven northern counties showed infestations at all points. Crop damage occurred in Kay, Grant, Garfield and Kingfisher Counties. Number of aphids per square foot averaged as follows: Noble, 80; Kay, 7200; Grant, 8000; Garfield, 5900; Kingfisher, 6150; Canadian, 900; Oklahoma, 260. (Coppock). SOUTH CAROLINA - Several instances of damage in Clemson area. (Chamberlain, Dec. 1). Damage noted at Greenwood, Newberry, Saluda, Florence and Johnsonville on early-planted oats. (Turner).

WHEAT STEM SAWFLY (*Cephus cinctus*) - NORTH DAKOTA - Infestation in wheat for 1955 totaled 2,428,000 acres infested with estimated 1,987,545 bushels loss. Favorable harvesting conditions helped to keep losses down. (N. D. Ins. Rept. Serv.).

LEAFHOPPERS - TEXAS - Heavy local infestations on young oats in Menard County. (Mullins).

CHINCH BUG (Blissus leucopterus) - ILLINOIS - Annual survey showed ratings as follows: very severe infestation in four counties; severe in five counties; moderate in 17 counties; and light in 11 counties. Remaining 35 counties rated as non-economic. The 19 counties rated severe or very severe in 1954 compare with 9 counties in the same categories in 1955. Very severe rating is based on 2000-and-up bugs per square foot and the severe rating is 1000-2000 per square foot. Counties rated very severe were DuPage, Kendall, LaSalle and Grundy. Those rated severe were Will, Kankakee, Iroquois, Tazewell and Stark. (Petty). NEBRASKA - Fall survey shows a light to very severe infestation in the southeastern area. Counts from 20-2983 per square foot. (Andersen). ARKANSAS - Infestations in all counties surveyed but lighter than in 1954. Heaviest infestations in Craighead, Clay and Lawrence Counties. (Warren).

GRASSHOPPERS - NORTH DAKOTA - Survey for eggs shows a general build-up of economic species in eastern area south of Highway No. 7 and extending southwestward to the Missouri River. Slope, Adams and Bowman Counties showed a build-up over 1954. Widely scattered infestations occurred in northwestern area, especially in the Buford-Trenton district and southeast of Williston in Nesson Flats into Mountrail County and northwestern McLean County. In 1955, 79,200 acres in 22 counties were sprayed voluntarily by farmers to protect 281,000 acres. Savings estimated at nearly $400,000 with a crop loss of $161,700. (N.D. Ins. Rept. Serv.).

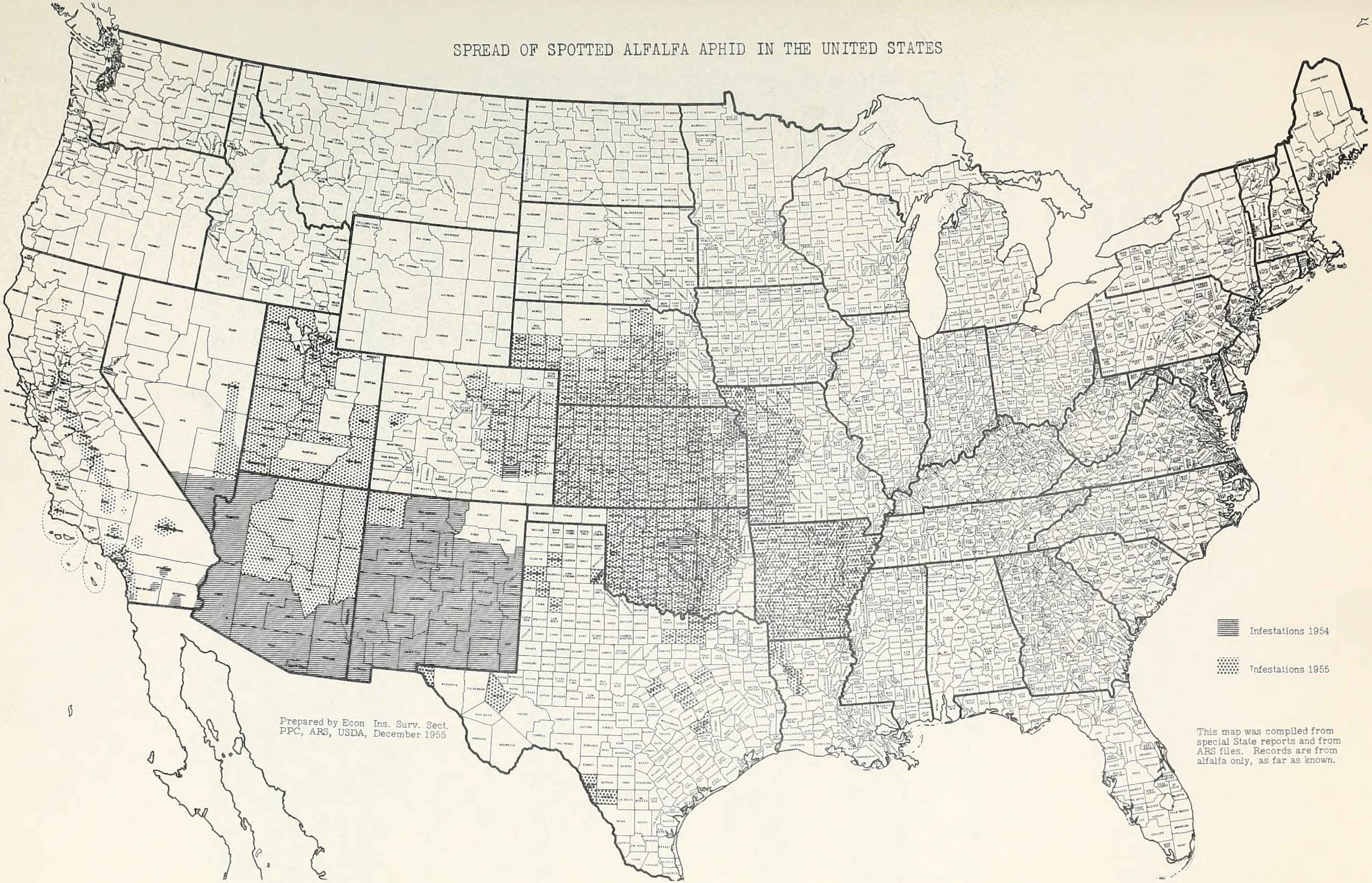
CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - In complex with Rhopalosiphum fitchii, a few were found in survey of panhandle area. (Daniels, Cleveland, Ashdown).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Heavy widespread populations caused considerable damage to interplanted rye and winter peas in Mason County. (Daniels, Cleveland, Ashdown).

RHODES-GRASS SCALE (Antonina graminis) - FLORIDA - Averaging hundreds per square foot on St. Augustine grass at Plantation Key, Monroe County. Extremely heavy infestation and large patches of grass killed by this species or by chinch bugs earlier. (Denmark, Weems, November 27).

LUPINE MAGGOT (Hylemya lupini) - FLORIDA - Infestation of larvae five percent one field and 15-20 in another at Gainesville, Alachua County. (Det. L. C. Kuitert). (Denmark).

SPREAD OF SPOTTED ALFALFA APHID IN THE UNITED STATES



Prepared by Econ Ins. Surv. Sect.
PPC, ARS, USDA, December 1955

This map was compiled from special State reports and from ARS files. Records are from alfalfa only, as far as known.

FRUIT INSECTS

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Infested 20-99 percent of English walnuts on infested trees and appears to be established at Ogden. First record of this pest in State. (Det. R. H. Foote). (Knowlton).

TRUCK CROP INSECTS

SQUASH BUG (Anasa tristis) - NEW MEXICO - Large numbers under old lumber in Mesilla Park. (Durkin).

A LEAF MINER (Liriomyza sp.) - ARIZONA - Rearing studies on 80 acres of volunteer cantaloupe October 6-24 in Maricopa County showed 1.1 parasites to one leaf miner adult. Parasites predominantly Halticoptera aenea. (Ariz. Coop. Rept.).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - SOUTH CAROLINA - Light to moderate infestations in cabbage plant beds, moderate to heavy infestations on turnips and mustard in Charleston area. (Cuthbert, Dec. 7).

IMPORTED CABBAGEWORM (Pieris rapae) - SOUTH CAROLINA - Light scattered infestations in cabbage fields in Charleston area. (Cuthbert, Dec. 7).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Moderately infesting a few commercial cabbage plantings. (Cuthbert, Dec. 7).

COTTON INSECTS

Boll Weevil Hibernation Survey - Fall 1955 - in Virginia

Between November 22-30, 200 square yards of surface woods trash, examined from five farms in each of four counties, showed average of 1476 weevils per acre in hibernation this fall. This compares with 2033 for 1954. Averages by county 1955 and 1954: Southampton 1549 and 2759, Brunswick 1258 and 2130, Mecklenburg 1646 and 484. One additional county, Nansemond, was inspected this year. An average of 1452 per acre was found in this county. (Walker, Morris et al).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Gin trash inspection showed a slightly higher infestation in Greenlee County but lower in Graham and Cochise Counties. None have been found outside these counties in Arizona and none in CALIFORNIA. (Pink Bollworm Cont. Prog. Rept. Nov. 16-30).

INSECTS AFFECTING MAN AND ANIMALS

SCREW-WORM (Callitroga hominivorax) - ARKANSAS - Found in navel wounds of swine in early October. One of few positive records for State. (Warren).

CATTLE GRUBS - OKLAHOMA - Of 108 cattle received for slaughter at Oklahoma City, 16 had no grubs; 39 had 1-10; 33 had 11-20; 28 had 21-50; and two had over 50. (Coppock).

CATTLE LICE - UTAH - Most important insect problem at present. (Knowlton).

PIGEON FLY (Pseudolynchia canariensis) - FLORIDA - Ten adults taken from one pigeon at Gainesville, Alachua County. (Det. D. W. Anthony). (Denmark).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

LONG-TAILED MEALYBUG (Pseudococcus adonidum) - FLORIDA - Hundreds per copper-leaf plant at Plantation Key, Monroe County, November 27. All stages present. (Weems, Denmark).

STORED PRODUCTS INSECTS

Stored Grain Insect Situation, Arkansas

In the Stuttgart-Dewitt area, 118 bins of rice and oats examined in November showed these infestations: RICE WEEVIL in three bins; Tribolium sp. in 18; SAW-TOOTHED GRAIN BEETLE in 21; LESSER GRAIN BORER in six; ANGOUMOIS GRAIN MOTH in three bins; INDIAN-MEAL MOTH in 12; FLAT GRAIN BEETLE in eight; FUNGUS BEETLES in two; CADELLE in three; and PSOCIDS in four. Far fewer insects found in November than in October. (Rouse).

A CORNWORM (Pyroderces rileyi) - ARKANSAS - Infestations have caused damage to unharvested and harvested corn in Crittenden County and adjacent areas. (Warren).

MISCELLANEOUS INSECTS

OLD HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - In combination with powder post beetles (Lyctus sp.) has heavily damaged floors in an old colonial house in Bedford County. Infestation active for many years. (Rowell).

A FUNGUS BEETLE (Alphitobius piceus) - OREGON - Occurring in large numbers in chicken litter at Milton-Freewater. (Det. M. C. Lane). (Capizzi).

TERMITES - MARYLAND - Infesting home at Catonsville, Baltimore County. (U. Md., Ent. Dept.).

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Annoying in homes and offices in several counties. (Knowlton).

Light Trap Collections

TEXAS (College Station, 12/3-8): Pseudaletia unipuncta 107; Agrotis ypsilon 18; Feltia spp. 12; Agrotis gladiaria 52. LOUISIANA (three traps at Tallulah, 12/3-9): P. unipuncta 47; A. ypsilon 35; Feltia subterranea 17; A. gladiaria 22; Heliothis zea 5. ARKANSAS (Stuttgart, 11/17-12/7): P. unipuncta 18; A. ypsilon 6; H. zea 5. (Varner, 11/17-12/6): P. unipuncta, 29; A. ypsilon 48; H. zea 36. (Fayetteville 11/19-12/7): P. unipuncta 7; A. ypsilon 2. FLORIDA (Homestead, 11/23 & 12/2): Feltia subterranea 1; Heliothis sp. 1. (Monticello, 11/23 & 11/29): F. subterranea 1. (Sanford, 12/2): Anticarsia gemmatilis 1; F. subterranea 1; H. zea 1. (Gainesville, 12/7): F. subterranea 1. GEORGIA (Spalding County, 11/27-12/2): P. unipuncta 1; A. ypsilon 2; F. subterranea 2. (Tift County, 11/27-12/2): F. subterranea 3. SOUTH CAROLINA (Charleston, 11/30-12/5): P. unipuncta 6; A. ypsilon 7; F. subterranea 5.

FRUIT INSECT CONDITIONS - 1955
NEW YORK - NEW ENGLAND STATES

New York - New England Fruit Spray Specialists' Conference
November 2, 1955

This summary has been compiled from reports submitted by cooperators in each state or area. (E. H. Wheeler and A. I. Bourne).

Symbols: G - of general concern as contrasted to L - of local importance only. 0 - negligible; 1, slight (less than 5% losses and/or injury) minimum effort gave satisfactory protection; 2, moderate (5-20% losses) satisfactory control required full program with good timing; 3, serious (20% up) special effort or emergency treatments required above and beyond a normal full program of preventive measures.

							New York	
CROP AND PEST	Me.	N. H.	Vt.	Mass.	R. I.	Conn.	Hudson Valley	Champ. Valley
APPLE								
Plum curculio	G-1	G-2	L-2	G-1	G-2	G-2	G-1	G-1
Apple maggot	G-1-2	G-1	G-1	G-1 L-2	G-2	G-3	G-1 L-2	L-1
Codling moth	L-3 G-2	G-0	G-2	G-1 L-2	G-1	G-3	G-1-2	G-2
Red-banded leafroller	G-1	G-1	L-1	G-2	G-1	L-2	G-2	G-2
Apple sawfly				L-0	L-0	L-3 G-1	L-1	
Bud moth	L-1-2	G-1	L-0-1	L-1	G-1	L-1	L-0	L-2
Rosy apple aphid	L-1	G-0	G-1	G-0	G-2	L-2	L-0	L-0
Apple aphid	G-2	G-3		G-2	G-2	G-1 L-2	G-1	G-2
White apple leafhopper	L-1	G-0	L-0		G-1	L-0	L-0	L-2
European red mite	G-2-3	G-2	G-1	G-1 L-2	G-3	G-3	G-1 L-2	G-3
Two-spotted spider mite		G-3	L-2-3	G-2 L-3	G-2	G-3	G-1 L-2	G-2-3
Clover mite		G-0		L-0	G-2	L-0	L-0	
Yellow mite	L-1	G-1		L-0	G-2	L-0		

CROP AND PEST (Continued)	Me.	N. H.	Vt.	Mass.	R. I.	Conn.	New York	
							Hudson Valley	Champ. Valley
Red bug and tarnished plant bug	G-2	G-0	G-1-2	G-1	G-1	G-1	L-1	G-1
San Jose scale		G-0	L-2	L-1	L-0	G-1	L-0	
Oyster shell scale	L-1	L-1		L-0-1	L-1	L-0	L-0	L-2
Japanese leafhopper					L-1	L-0		
Forest tent caterpillar			G-1-2					
Oriental fruit moth						L-0		
Apple seed chalcid	L-1							
PEAR								
Pear psylla		G-1		G-1 L-2	L-1	G-1	G-1	L-2
Pear midge		G-0			L-1	L-1	L-1	
Blister mite		L-0		L-1	L-1	L-1	L-0	
Codling moth		G-0		L-1	L-2	G-2	G-2	L-2
PEACH								
Plum curculio	L-1-2	G-1		G-1	G-2	G-2	G-1	
Oriental fruit moth		G-0		G-1 L-2	G-2	G-2	G-0 L-1	
Peach tree borer		G-1		G-1	G-2	G-1	L-1	
Two-spotted spider mite		G-3		G-1	L-1	G-2	G-0 L-1	
European red mite		G-1		L-0	L-2	G-2	G-0 L-1	
Plant bugs	L-1	G-1		G-1 L-2	L-1	G-1 L-3	L-1	
CHERRY								
Fruit fly					L-1		G-0 L-1	
Plum curculio					G-2		G-1	
Black cherry aphid				G-1	L-0		G-0	
PLUM AND PRUNE								
Plum curculio				L-2*	G-2	G-2	G-1	G-2
Plum aphid					L-1		L-0	G-2

*On Beach Plums

CROP AND PEST (Continued)	Me.	N. H.	Vt.	Mass.	R. I.	Conn.	New York Hudson Valley	Champ. Valley
European red mite				L-0	L-1	G-1	G-1	G-3
McDaniel mite								G-3
Plum gouger				G-2*				
GRAPE								
Berry moth	L-1	G-1		G-1	L-1	G-2	L-1	
Cane girdler				L-2	L-1		L-1	
Leafhopper	L-2	G-1			L-1		G-0	
Tomato and blister galls		G-2		L-2-3	L-1	G-2	G-0 L-2	
Japanese beetle				L-3**				
BLUEBERRY (Cultivated)								
Cranberry fruitworm	G-2	G-1		G-1	L-2	L-1		
Cranberry weevil				L-2	L-1	L-1		
Stem borer				L-1	G-2	L-1		
Fruit fly (maggot)		G-1		G-1 L-3	L-2	G-2		
Cherry fruitworm	G-2-3			G-2				
Stem gall				L-2				
BLUEBERRY (Wild)								
Fruit fly (Maggot)		G-2		G-1				
STRAWBERRY								
Weevil	L-1	G-1		L-0	L-0	L-1	G-0 L-1	
Rootworm	L-1	G-1		L-0	L-0	L-1	L-1	
White grub	G-2-3	G-1		L-1	L-1	L-2		
Spittlebug		G-0		G-0	L-1	G-0	G-0-1	
Leaf roller	G-1	G-1		L-1	L-1	L-1	L-1	
Two-spotted spider mite		G-1	G-2	L-1-2	L-1	G-2	G-0 L-1-2	
Cyclamen mite	G-3	G-1		L-2	L-1			

*On Beach Plums

**Eastern Massachusetts

CROP AND PEST (Continued)	Me.	N. H.	Vt.	Mass.	R. I.	Conn.	New York Hudson Valley	New York Champ. Valley
Cutworm	G-1	G-0		G-1	L-1	L-3		
Tarnished plant bug			G-2					
Strawberry root aphid			G-2					
Whitefly				G-1				
RASPBERRY								
Fruitworm		G-0		L-1	L-1	L-1	L-0	
Cane borer	G-1	G-1		L-1	L-2	L-1		
Two-spotted spider mite		G-0		L-2-3	L-1	G-2		
GENERAL FEEDERS								
Japanese beetle		L-1	L-1	G-1 L-2	G-2	G-1 L-3	G-0	L-3
Rose chafer		G-1	L-1	G-2	G-1	G-1	G-0	

New Distribution Records: MASSACHUSETTS - European apple sawfly (at Waltham, eastern Massachusetts - Granville, western Massachusetts. CONNECTICUT - European apple sawfly on border in Connecticut Valley. CHAMPLAIN VALLEY (N. Y.): McDaniel mite noted in a few additional orchards of Clinton County. HUDSON VALLEY (N. Y.): European apple sawfly in southern Ulster County (confirmation of 1954 reports). NEW HAMPSHIRE - Phenacoccus aceris (apple mealy bug) found May 24 in Hancock. Heavy infestation on several trees. In early June found light infestation in Contoocock on neglected trees. MAINE - New York weevil.

Unusual outbreaks: MASSACHUSETTS - Giant hornet (V. crabro germana). Cherry fruitworm was more damaging than cranberry fruitworm on cultivated blueberries. CONNECTICUT - Two-spotted mite and codling moth; heavy russeting on Baldwins. CHAMPLAIN VALLEY (N. Y.) - Red and McDaniel mites built up more than usual due, presumably, to heat. Red-banded leafroller has gradually become more difficult to control during past three years. HUDSON VALLEY (N. Y.) - Fruit-tree leafroller generally present but causing little commercial damage. MAINE - Leaf curling midge.

Abnormal seasonal occurrences: MASSACHUSETTS - Apple maggot - late activity. Heavy population. Control only fair on late varieties. Red-banded leafroller - partial third brood. Late activity. Plum curculio - population very high. Control good. European corn borer - in some orchards near corn plantings 5-10 percent infestation of McIntosh drops. HUDSON VALLEY (N. Y.) - Probable partial third brood of red-banded leafroller, increased second brood codling moth. NEW HAMPSHIRE - Weather conditions must have been favorable for overwintering and hatching of aphid eggs. Very heavy infestation of apple aphid soon after bud break in most areas of the state.

Unusual Contributing Factors: MASSACHUSETTS - Prolonged drought followed by abundance of rainfall (backlash of two hurricanes). High temperature and prolonged drought favored apple aphid and two-spotted mite abundance and added to damage caused. Plentiful rainfall in 1954 promoted abundance of Japanese beetle in 1955. CONNECTICUT - High temperatures in July and August. CHAMPLAIN VALLEY (N. Y.) - Persistent hot weather made most insects a little more difficult than usual to control. HUDSON VALLEY (N. Y.) - Hot, dry summer, if that is unusual.

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SUMMARY OF INSECT CONDITIONS - 1955

SOUTH DAKOTA

Reported by T. A. Burge, G. B. Spawn,
J. A. Lofgren and W. M. Hantsbarger

Cereal and Forage Insects

ARMY CUTWORM (*Chorizagrotis auxiliaris*) infestations were reported from several sections, mainly in Tripp, Gregory, Brule, Aurora, Douglas, Davison, Charles Mix, Dewey and Butte Counties. Most damage was to alfalfa in early spring with but slight marginal damage to wheat. Losses were estimated at approximately $60,000 and approximately 6,500 acres were treated for control. EUROPEAN CORN BORER (*Pyrausta nubilalis*) surveys in early spring indicated a winter survival of approximately 75 percent. Pupation was underway by May 7. Conditions for egg laying were favorable in some areas where corn was not far enough advanced to be attractive for egg deposition but cool nights delayed egg laying over a longer period so that the majority of eggs were deposited after June 15. Eggs hatched during first part of July and shot-hole injury was quite prevalent over the State by July 15. Pupation started the last week in July and reached 50 percent in the east central region by August 12. Flight of second-brood moths was quite heavy with some fairly high second-generation egg counts. Development of the second brood was not as severe as anticipated. The fall survey indicates an average of 121 borers per 100 plants for counties surveyed. Highest average infestation was 345 borers per 100 plants in Bon Homme County. GRASSHOPPERS - By the last week of May, *Melanoplus bivittatus*, *M. mexicanus* and *M. differentialis* eggs had started to hatch. Weather at this time was quite favorable for development. Cool and wet weather the latter part of June took a heavy toll of nymphs, especially in the central regions. The result was light, scattered infestations of *M. bivittatus*, *M. differentialis* and *M. mexicanus* in the central counties and west of the Missouri River with *Camnula pellucida* dominant in the hay meadows of western Pennington County. Infestations east of the Missouri River ran from light to threatening mainly in legumes with the dominant species being *M. femur-rubrum.* The egg survey in most instances corroborated the findings of the adult survey. Losses due to grasshoppers in 1955 are estimated at $483,700 and there were approximately 97,000 acres treated for control. CORN EARWORM (*Heliothis zea*) was quite prevalent in 1955, especially in the more eastern areas. In some fields two larvae per ten plants were found. Adults of SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) were extremely numerous, especially in the southeastern portion of the State, although they were found as far north as Marshall County. Beetles were found on a number of plants, including squash, cucumbers, sun flowers, goldenrods, alfalfa and corn. Adults of *D. longicornis* were observed in southeastern counties, but never in great numbers. Adults of WESTERN CORN ROOTWORM (*D. virgifera*) were found feeding upon corn silks in Bon Homme and Moody Counties. CORN LEAF APHID (*Rhopalosiphum maidis*) was very abundant on corn earlier in the season but predators and warm, dry weather reduced the numbers to non-economic levels. ENGLISH GRAIN APHID (*Macrosiphum granarium*) and CORN LEAF APHID infestations were found throughout the State on small grain, especially oats and barley. Some damage occurred to late barley.

ALFALFA WEEVIL (*Hypera postica*) infestations of economic importance were confined to the Black Hills area although the insect continues to spread eastward. Adults and larvae were picked up almost to the eastern edge of Perkins County. Approximately 21,000 acres were treated for alfalfa weevil control. BLISTER BEETLES, predominantly *Epicauta pennsylvanica* and *E. fabricii*, were very numerous in alfalfa fields of the central regions, where some local injury occurred. In some areas counts reached 42 beetles per 10 net sweeps. SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) was abundant in alfalfa throughout the eastern part of the State, particularly in September, when counts reached 248 adults per 10 net sweeps. High populations of PEA APHID (*Macrosiphum pisi*) were encountered earlier in the summer with counts up to 1360 per 10 net sweeps in alfalfa. Infestations decreased by July 10 due to hot, dry weather and also because of predators, especially lady beetles, which were numerous. SWEETCLOVER WEEVILS (*Sitona cylindricollis*) were active early in the season, feeding on both old clover and new seedings. Some damage occurred to new seedings in some areas. CLOVER SEED CHALCID (*Bruchophagus gibbus*) was quite prevalent in alfalfa. Many areas reported damage to seed crops, especially in south central areas. TARNISHED PLANT BUG (Lygus lineolaris) was not abundant although found commonly in clover and alfalfa. Highest average infestations observed were about 3 per net sweep. ALFALFA PLANT BUG (Adelphocoris lineolatus) occurred in about the same numbers as Lygus with up to 4.2 per net sweep. RAPID PLANT BUG (Adelphocoris rapidus) was prevalent in alfalfa and clover but never in economic numbers.

Vegetable Crop Pests

APHIDS, several species, were troublesome to a number of vegetable crops, especially potatoes and tomatoes. POTATO LEAFHOPPER (Empoasca fabae) was abundant on untreated potatoes and "hopperburn" was noted from several localities. SQUASH BUG (Anasa tristis) occurred in greater numbers than usual in eastern areas, feeding on various vine crops, including melons and squashes. SPOTTED AND STRIPED CUCUMBER BEETLES were very abundant in gardens throughout the eastern counties.

Pests of Shade Trees and Ornamentals

CANKERWORM infestations were noted in the spring, especially on apple and elm trees where some defoliation occurred. Heavy infestations of SCURFY SCALE (Chionaspis furfura) occurred, especially on willows in eastern areas. Scattered infestations of YELLOW-NECKED CATERPILLAR (Datana ministra) in the eastern areas defoliated basswood and oaks. BRONZE BIRCH BORER (Agrilus anxius) infestations were found on several birches in eastern areas. FALL WEBWORM (Hyphantria cunea) was more abundant than usual, feeding on a wide variety of hosts. Damage was limited to partial defoliation of some trees.

Insects of Man and Animals

HOUSE FLY (Musca domestica) and STABLE FLY (Stomoxys calcitrans) were very abundant and caused considerable annoyance in most areas of the State. HORN FLY (Siphona irritans) infestations ranged up to 600 per animal in untreated herds. CATTLE GRUBS (Hypoderma spp.) occurred in normal numbers. Many reports received of the AMERICAN DOG TICK (Dermacentor variabilis) in wooded areas of the State. MOSQUITOES and BLACK FLIES were very troublesome early in the spring but annoyance decreased rapidly with warm, dry weather in most sections.

Fruit Pests

CODLING MOTH (Carpocapsa pomonella) was more prevalent this season and the second generation was especially damaging to late varieties in home orchards in the Southeast. APPLE MAGGOT (Rhagoletis pomonella) was present in about normal numbers.

Stored Grain Pests
Heavy infestations of SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) occurred in eastern areas, especially in farm-stored oats and corn. This pest also was found very commonly upon stored food products in the home. INDIAN-MEAL MOTH (Plodia interpunctella) was quite prevalent upon shelled corn held in storage.

Household Pests
STRAWBERRY ROOT WEVIL (Brachyrhinus ovatus) was more numerous than usual this year from many sections of the State. CARPET BEETLES (Attagenus sp. and Anthrenus sp.) caused damage in many areas. Damage occurred to woolen garments in a department store. BOXELDER BUG (Leptocoris trivittatus) was more prevalent during the fall than for several years. CLOVER MITES (Bryobia praetiosa) were very annoying in homes during late winter and early spring of 1955.

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SUMMARY OF INSECT CONDITIONS - 1955

NEVADA

Reported by H. E. Gallaway

Cereal and Forage Insects
Cropland infestations of GRASSHOPPERS were mostly localized to individual fields requiring limited control. Dominant species were Melanoplus mexicanus, M. femur-rubrum and M. bivittatus. Severe populations of Camnula pellucida developed on the range and native wild hay pasture lands primarily in the northeastern part of the State (Elko and White Pine Counties). Populations of C. pellucida ranged from 20 to 100 per square yard adjacent to important crop area. A cooperative control program was initiated to check this build-up. Approximately 10,000 acres of the most severe infestations were controlled with good results. The adult survey indicates a threat of C. pellucida in the northeastern portions, a slight increase of M. packardii, especially along drain ditches and margins, and Cratypedes neglectus in meadow and open rangelands adjacent to agricultural valleys throughout the central and western parts of the State. Approximately 3000 acres infested by MORMON CRICKET (Anabrus simplex) in the Diamond Mountains of Eureka County were treated during 1955. The adult survey of 1955 indicates a build-up in the following mountain ranges that will require control during 1956: Eureka County, Diamond Mountains; Humboldt County, Sonoma Range; Pershing County, East Range; Lander County, Galena Range. HARVESTER ANTS were major insect pests throughout most of the western ranges. Limited control work

is done each year in agricultural valleys. However, thousands of acres of rangeland are destroyed each year. ALFALFA WEEVIL (Hypera postica) populations continued at normal numbers throughout most of the central and northern areas. There was a definite increase to economic population in the southeastern part (Lincoln County). While the weevil has been present in this area for many years, it has not become of major economic importance. However, this year severe losses occurred in the Pahranagat Valley. During September adults averaged one per sweep in many alfalfa fields. In the northern and central areas an estimated 70 percent of the 120,000 acres of alfalfa contained economic populations or was treated for control.

In the southern regions of the State SPOTTED ALFALFA APHID has become number one in importance. First found in Nevada during September 1954, populations have increased and spread to all alfalfa fields in Clark County and southern Nye County. By mid-May 1955 economic populations had developed in most fields infested in 1954. The populations dropped to a low point during August with a build-up starting in mid-September and continuing through October. Most fields required control for each cutting; however, during October and November some individuals had to treat new plantings three times for protection of seedlings. During 1955 migrations extended up the eastern side of the State, in the direction of prevailing winds, reaching the Pahranagat Valley (Lincoln County) in mid-June and the White River Valley (White Pine County) during August. In White Pine County economic populations developed in individual fields on second-crop alfalfa and carried over into the third cutting. This northern migration now places the aphid at 39° N. latitude and 5500 feet elevation in economic populations.

During 1955, populations of ALFALFA CATERPILLAR (Colias philodice eurytheme) showed a general increase. Economic populations, confined to individual fields, occurred in Clark, Nye and Churchill Counties. In the south severe populations did not develop to the extent of past years, primarily due to the control work on spotted alfalfa aphid. Larval count averaged 6 per sweep during September. YELLOW-STRIPED ARMYWORMS - General infestation of economic numbers in Moapa Valley (Clark County) during September, with counts in many fields averaging 25-30 per sweep. Local infestations occurred in the Churchill County areas. Control work exclusively for this insect was limited to a few fields; however, additional control was received in conjunction with spotted alfalfa aphid work. During September populations of the THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) averaged 10-15 per sweep throughout most fields in the south. LYGUS BUG populations were general throughout the State with counts of 7 to 10 per sweep in most fields. Severe infestations of CORN EARWORM (Heliothis zea) were general throughout most cornfields, many fields having 100 percent infestations, while some individual fields were almost totally destroyed, especially in the southern areas. Some control was done on field corn but, due to improper timing, results were poor.

Truck Crop Insects

ONION THRIPS (*Thrips tabaci*) was a major pest in all onion fields whether for green onion or dry onion production. In the southern areas populations reached economic numbers in green onion fields during late February and early in March; then again on fall plantings during late October and early November. In the dry onion areas of west central Nevada economic populations developed during late June and required control during the remainder of the season. ONION MAGGOT (*Hylemya antiqua*) was somewhat confined to individual fields throughout the dry onion producing areas. Severe damage was encountered during late April and early May, generally along the margins, with total destruction limited to a few small fields. It has not become a serious pest in the southern areas.

Cotton Insects

Cotton insect pests were light during 1955. TWO-SPOTTED SPIDER MITE in economic numbers was limited to a few small spots in three fields. BOLLWORM was lighter this year than in the past, with less than an estimated 1/10 of 1 percent infested bolls. Boll counts during pink bollworm survey showed 0.02 percent bollworms (Heliothis spp. et al) with negative results for the major cotton insect pests and light damage due to a cotton stainer. LYGUS BUGS were abundant in all fields and and may have contributed to blossom drop and poor set of the first flowers.

Shade Tree and Ornamental Insects

ELM LEAF BEETLE (*Galerucella xanthomelaena*) continued as the number one pest of shade trees. This insect has now spread to all communities in a 100 mile radius of Reno. Most American and cork elm trees not treated were 100 percent defoliated by July 15; second brood began appearing on August 10, causing some defoliation to second growth leaves. VIRGINIA CREEPER LEAFHOPPER (*Erythroneura ziczac*) again defoliated most of the Virginia-creeper throughout western Nevada. It was about three weeks later developing severe populations than during 1954.

Stored Grain Insects

Isolated infestations of the LESSER GRAIN BORER (*Rhyzopertha dominica*) did considerable damage to stored grains during the late spring and early summer and calls were received in regard to the SAW-TOOTHED GRAIN BEETLE (*Orzaephilus surinamensis*) and YELLOW MEALWORM (*Tenebrio molitor*) in rare instances. Non-economic numbers of CARPET BEETLES were present in most buildings and the major livestock feed yards were inspected three or more times for Khapra beetle during the year with negative results.

Household Insects

Major pests affecting the household and home gardeners were clover mite, earwig, lawn moth, black widow spider, mealworm, saw-toothed grain beetle, ants, termites, and European earwig. TERMITE infestations are becoming more numerous in western and southern Nevada. This year swarming termites were unusually active in late winter and early spring and again in early fall (October). CLOVER MITES became a major pest in many areas of western Nevada during late April and May, and again during October. EUROPEAN EARWIG (*Forficula auricularia*) in economic numbers now occurs in most towns and cities in western Nevada in a radius of 150 miles of Reno and in the southern part of the State.

Insects Affecting Man and Animals

The general list of insects, cattle grubs, lice, flies, mosquitoes, gnats and ear tick affecting livestock were normal in numbers except in the southern part of the State, where unusual summer rains bred severe populations of mosquitoes and gnats, creating problems of control. Most livestock men now enter into a program of lice and fly control. A number of identifications and calls were received concerning BED BUG infestations in private homes from many points throughout the State.

General

One of the major pests in the State affecting agriculture is the root knot nematode. No report on pest problems is complete without listing this pest as one of major importance.

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